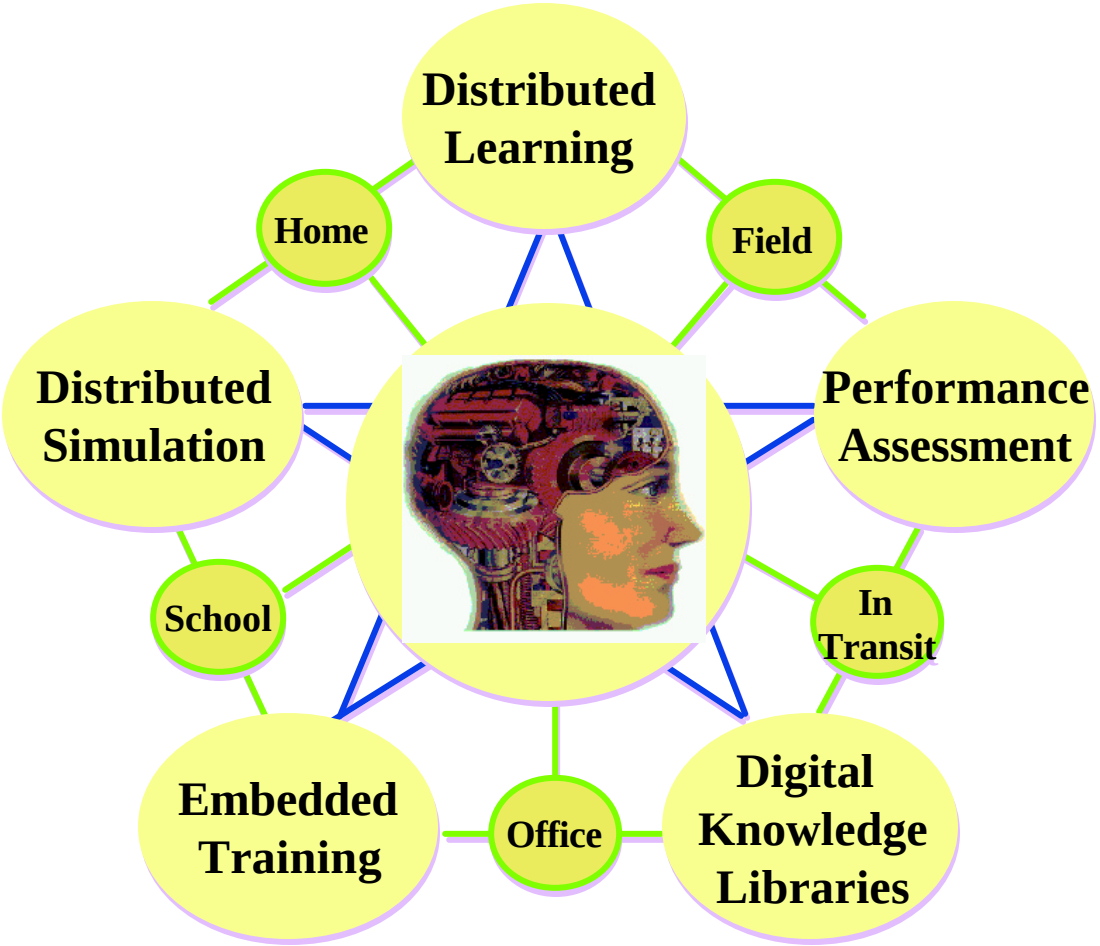
Creating the Digital Knowledge Environment Through Colalboration

The ADL Vision

Provide access to the highest quality education and training, tailored to individual needs, delivered cost effectively, anywhere and anytime.



Advanced Distributed Learning

The “A” in ADL

Server

Shareable Content Objects from across the World Wide Web

Assembled in real-time, on-demand

To provide learning and assistance anytime, anywhere

Advanced Distributed Learning

Alexandria ★ Orlando ★ Wisconsin

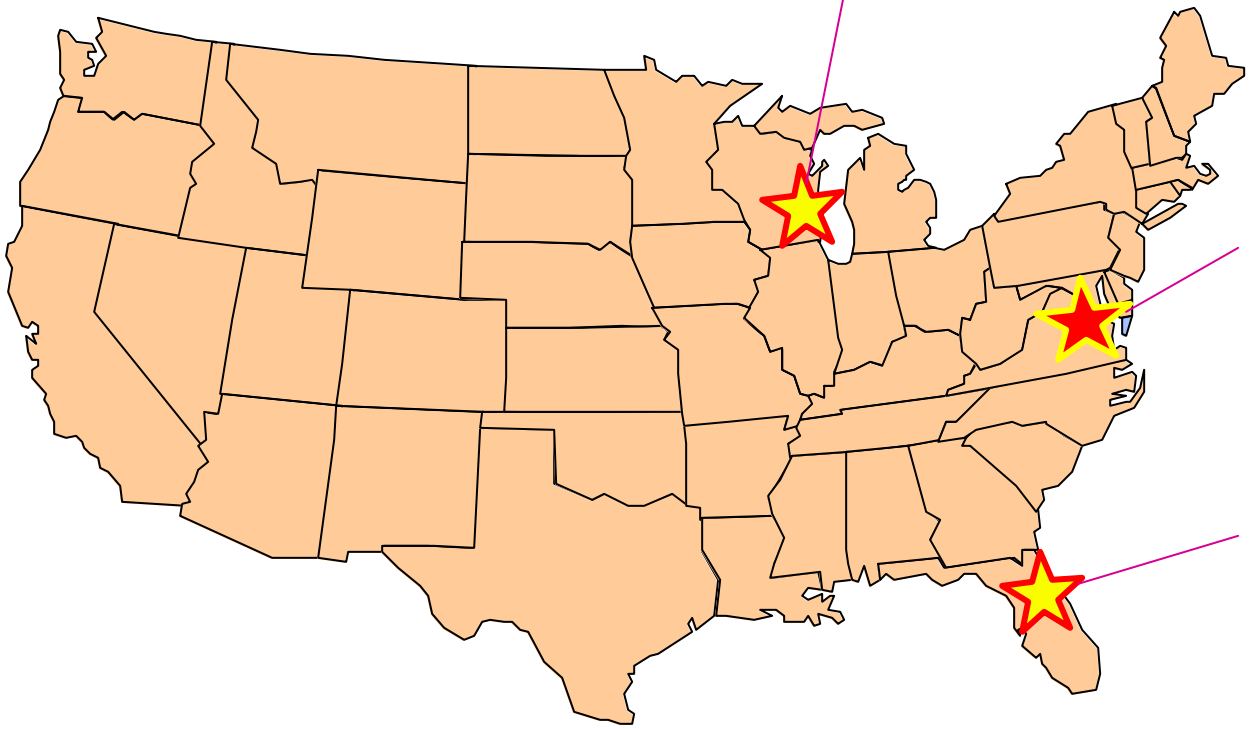
What is the ADL Co-Lab ?

An open, collaborative environment for sharing learning technology research, development, implementation and evaluations.

Advanced Distributed Learning

ADL Co-Labs

Academic ADL Co-Lab
Focal point for academic
collaboration & accreditation



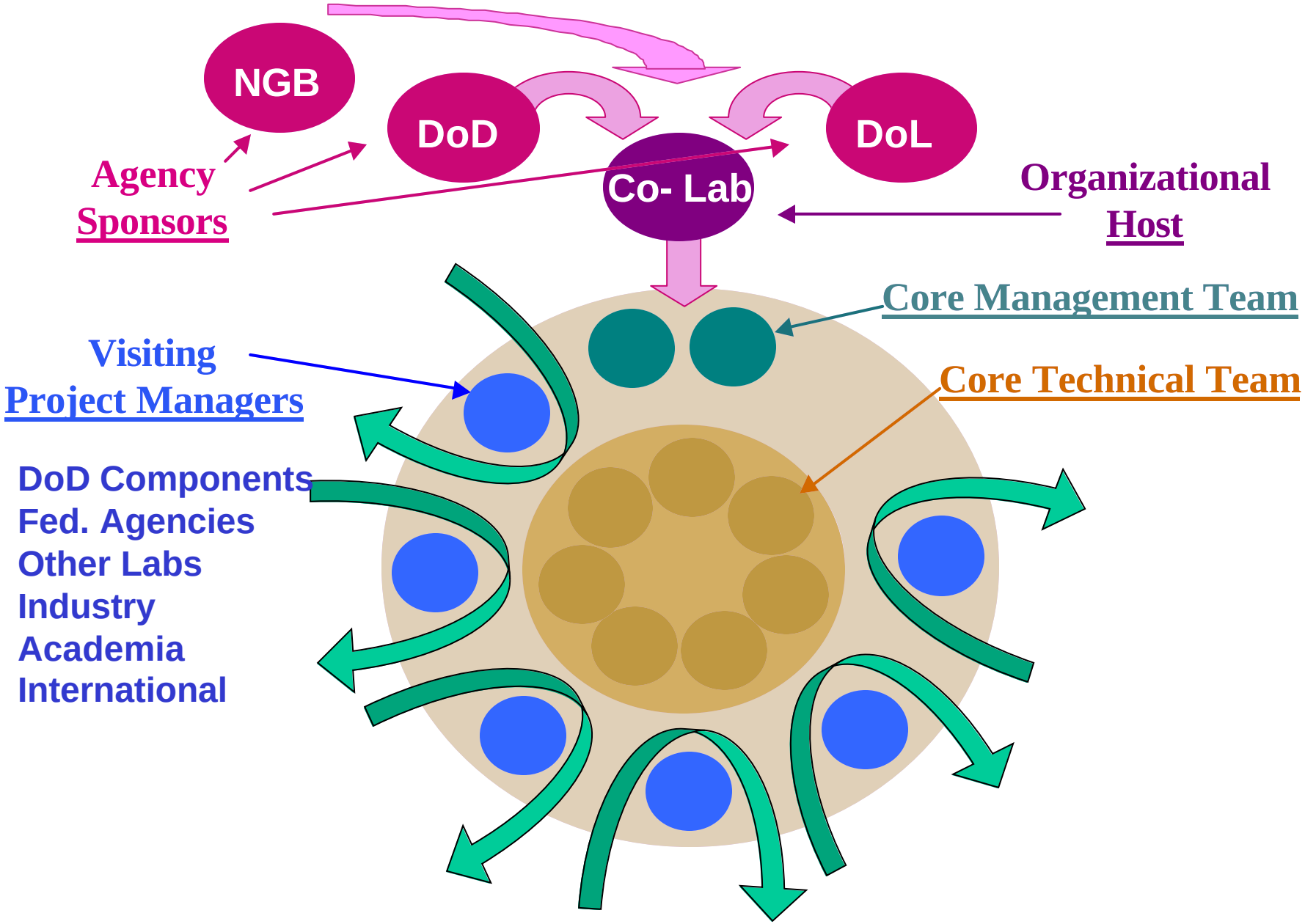
ADL Co-Lab Hub
Policies, Tools & Standards
DoD-Federal Integration
ADL Portal & Clearinghouse

JOINT ADL Co-Lab
Implement in military
Systems Acquisition Community

- - - - - - - - - - - - - - - - - -

$$ Incentive Funds

Collaborative Process



National Guard Bureau
ADL Co-Lab Initiatives

Promoting Virtual Learning Through Collaboration

What is the DTTP?

A nationwide, state-of-the-art, technology-assisted training and information delivery system

Advanced Distributed Learning

www.adlnet.org

DTTP Classroom Capabilities

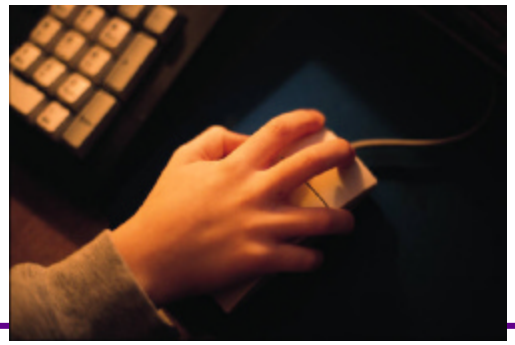
Networked Classrooms

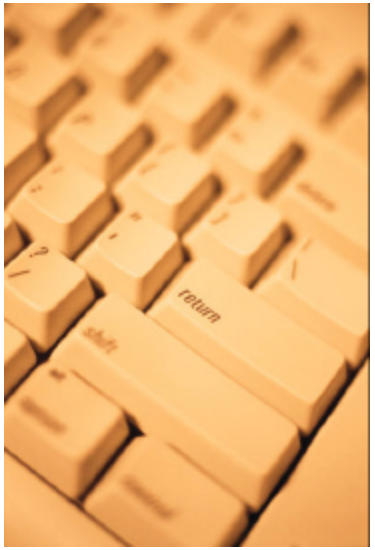
Touch Panel Classroom Control

Remote Maintenance

Digital Video Storage

Remote Offices / Telecommunication Centers
- Printer-Copier-Fax Service
- Internet Access





Video Teleconferencing

Room-based Video Teletraining

Course Metering & Scheduling Service

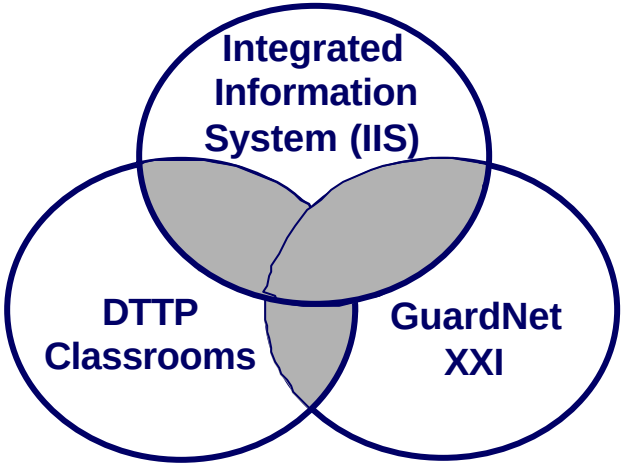
Audio Conferencing

Courseware Storage & Delivery

Advanced Distributed Learning

DTTP… A System of Systems

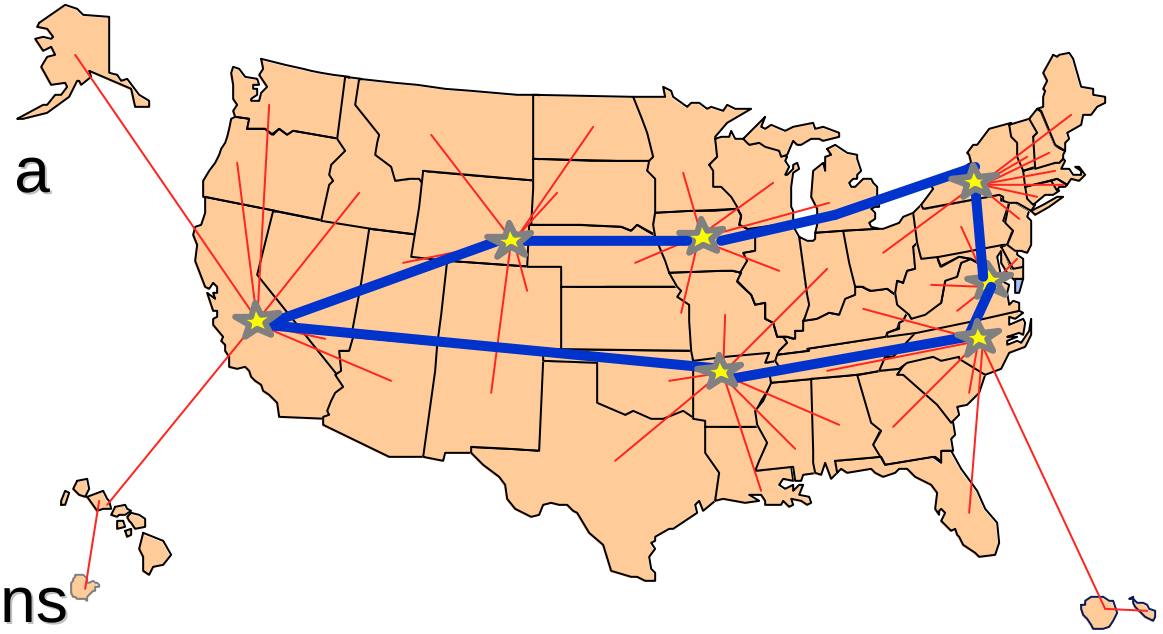
- GuardNet
  - ATM backbone
  - Connectivity to 54 states/territories
- Multi-media classrooms
  - 251 installed as of 10 July 2001
  - Approximately 478 planned by 2003
- Integrated Information System (IIS)
  - Courseware access from repositories
  - Scheduling services (local and network)
  - Metering/billing



Advanced Distributed Learning

GuardNet XXI

- Connects seven regional hub sites in a fully meshed configuration
- Supports distance learning and Army National Guard enterprise applications



- Demonstrates interoperability between other military and civilian networks
- Provides broadband, high-speed circuits

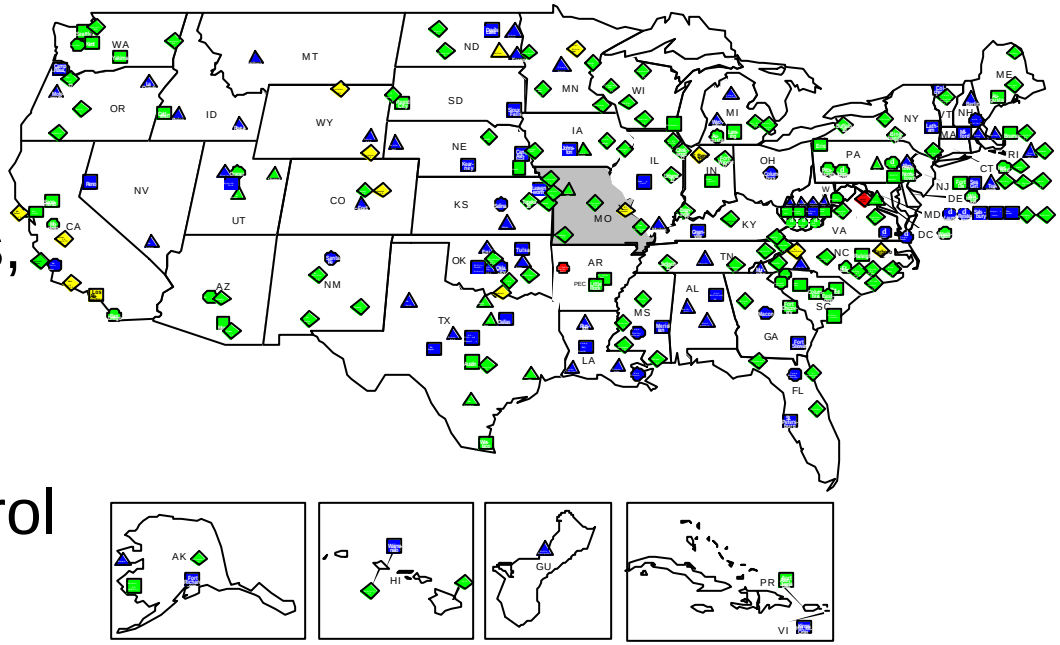
Advanced Distributed Learning

Classroom Locations

- Fielding an average of seven classrooms per month
- To date, installed **251** multimedia classrooms, 61 Small Trainer Classrooms, and 54

  ATM command & control

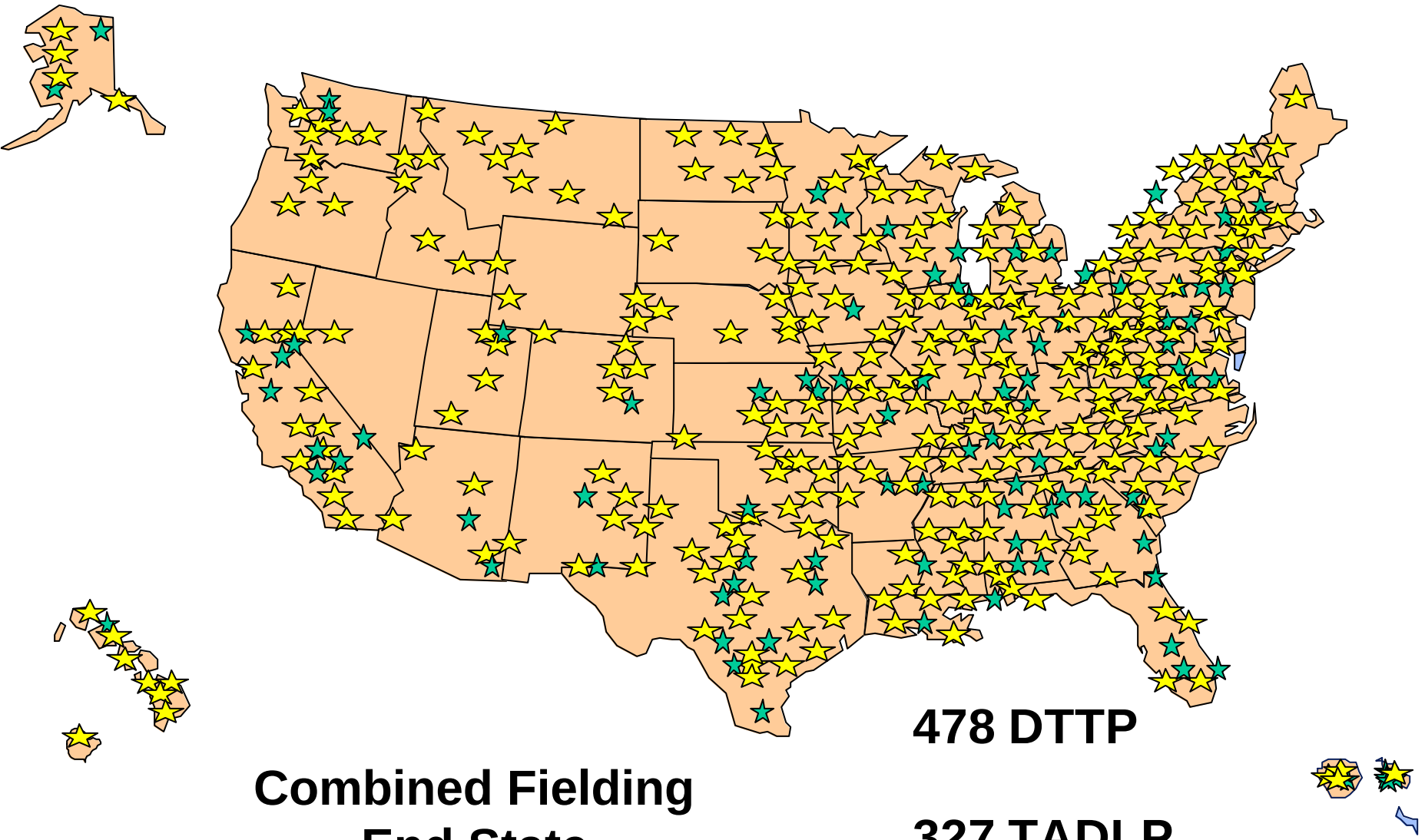
  VTC sites



www.adlnet.org

Advanced Distributed Learning

DTTP/TADLP Sites



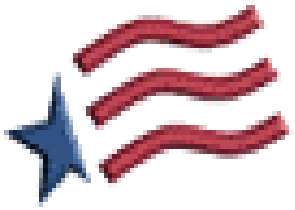
478 DTTP

327 TADLP

Combined Fielding End State

FEDERAL

LEARNING eXchange



Your Guide to Federal Learning Resources

www.adlnet.org

Advanced Distributed Learning

Business Model

Repository for Content

for reusable learning components

e-Learning Resource Centers

create developers for new learning economy

Yellow Pages Listing of Courses

organize training market

Marketplace

facilitate collaboration

Sharing DoL Tools

America's Career Kit

DoD, NGB and DOL Joint Activities

- Navy - Apprenticeship
- Air Force - Intelligent Tutors
- National Guard Bureau – Classrooms, CMA, Interoperability, Recruitment
- Army Reserve - CMA
- Co Lab - SCORM Repository
- Government Learning Technology Symposium – JettCon 2001
- Federal Executive Boards Regional Showcase – NAPA & Grad School

Training and the Future Classroom: An Overview of the Joint ADL Co-Laboratory and the ADL Prototypes

Janet Weisenford

Director

Joint ADL Co-Laboratory

Joint ADL Co-Lab Goals and Function

Support implementation of ADL in the Department of Defense by

- **Developing ADL prototypes**
- **Assembling guidelines for creating effective web-based learning**
- **Serving as consultants to the Services on ADL**
- **Collecting and disseminating lessons learned**
- **Coordinating ADL programs to facilitate re-use**
- **Evaluating ADL products such as learning management systems**

JOINT ADL Co-Laboratory

- Coordinates with the R&D community
  - Helps identify gaps in current capabilities and technologies for ADL implementation
  - Provides a “testbed” for conducting R&D
  - Works with industry to evolve commercial products to address defense requirements
- Works with the acquisition community to:
  - integrate commercial specifications into government acquisition process
  - Identify costs and benefits of changing current practices

Advanced Distributed Learning

Joint Advanced Distributed Learning Co-Laboratory

AFHRL

Office of the Secretary of Defense

Readiness & Training

U. S. Coast Guard Liaison Office

Chief of Naval Education & Training

AMEDD

Naval Air Warfare Center Training Systems Division

Located at:

U.S. Army Intelligence Center & Fort Huachuca

U. S. Marine Corp Program Office

University of Central Florida Institute for Simulation & Training

U. S. Army Simulation, Training & Instrumentation Command

U. S. Air Force Agency for Modeling & Simulation

CINCLANTFLT

U. S. Army Research Institute

AIR FORCE INSTITUTE FOR ADVANCED DISTRIBUTED LEARNING

www.adlnet.org

Purpose of ADL Prototypes

- Encourage use of Advanced Distributed Learning
- Support innovation
- Foster collaboration
  - Test reuse process
- Get feedback on implementation issues
  - Identify recommended changes to the SCORM
  - Uncover problems so that they can be addressed
- Collect and share lessons learned

Criteria for Selection

- ✓ Interservice Participation
- ✓ Leveraging of Resources
- ✓ Support of ADL “ilities”
  - ✓ Accessibility
  - ✓ Reusability
  - ✓ Interoperability
  - ✓ Adaptability
  - ✓ Durability
- ✓ Use of SCORM
- ✓ Implementation
- ✓ Value

Prototypes

- Six rapid prototypes initiated in FY 00
- Call for prototypes issued in FY 00 and 01
  - In FY 01, requested proposals in three areas:
    - Medical
    - Performance Support
    - Use of entertainment and gaming technology
  - In FY 01, used two phase process with white papers submitted initially and reviewed
  - All proposal must be submitted by military organization; partnering encouraged
- Call for prototypes in FY 02
  - Emphasis on “A” in ADL; collection of data

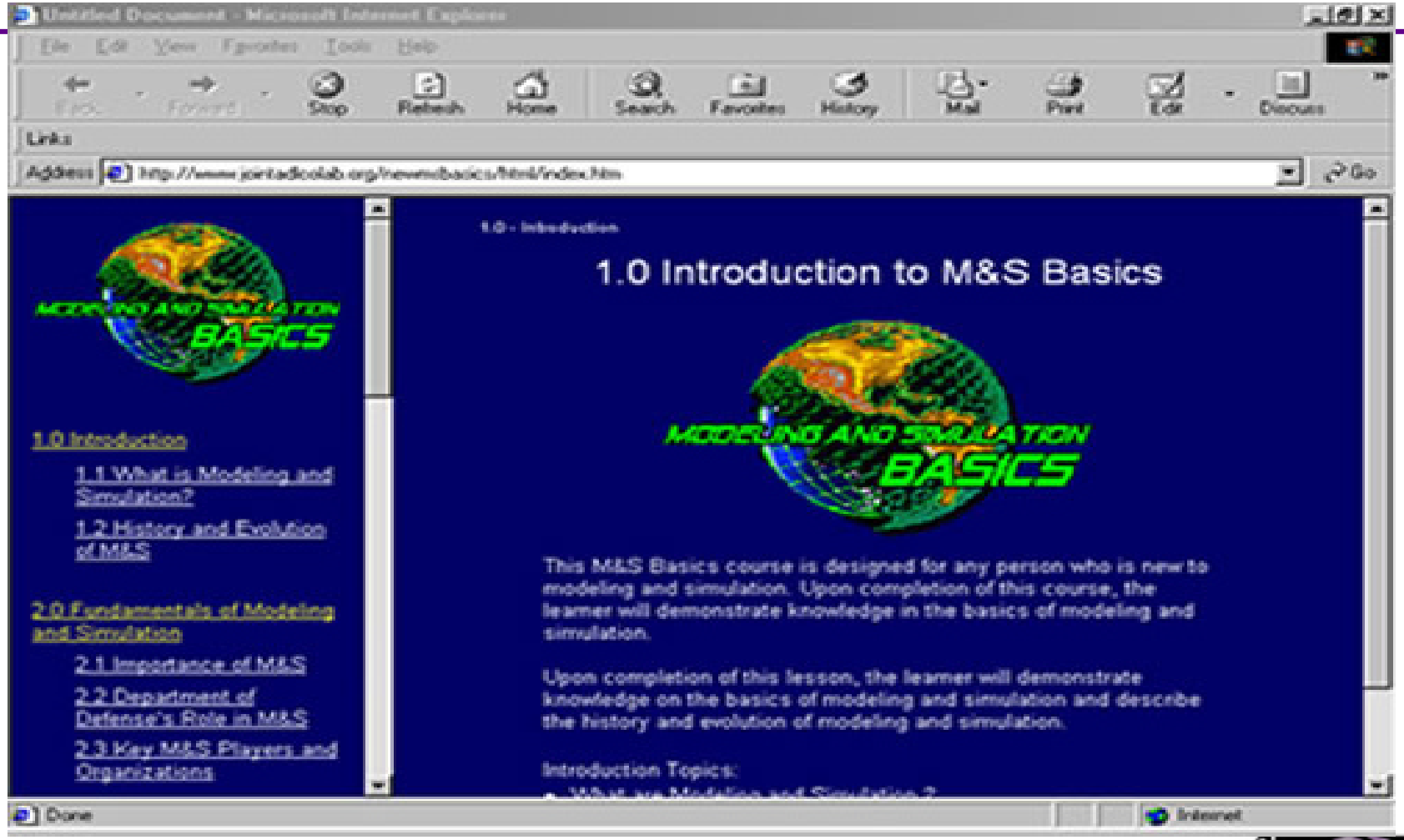
Overview of Prototypes

- 26 Prototypes funded through the FY 01 and 02 calls
- Represent a mix of new starts and converting legacy content from:
  - Classroom
  - Traditional computer based training
  - Web

What's Different

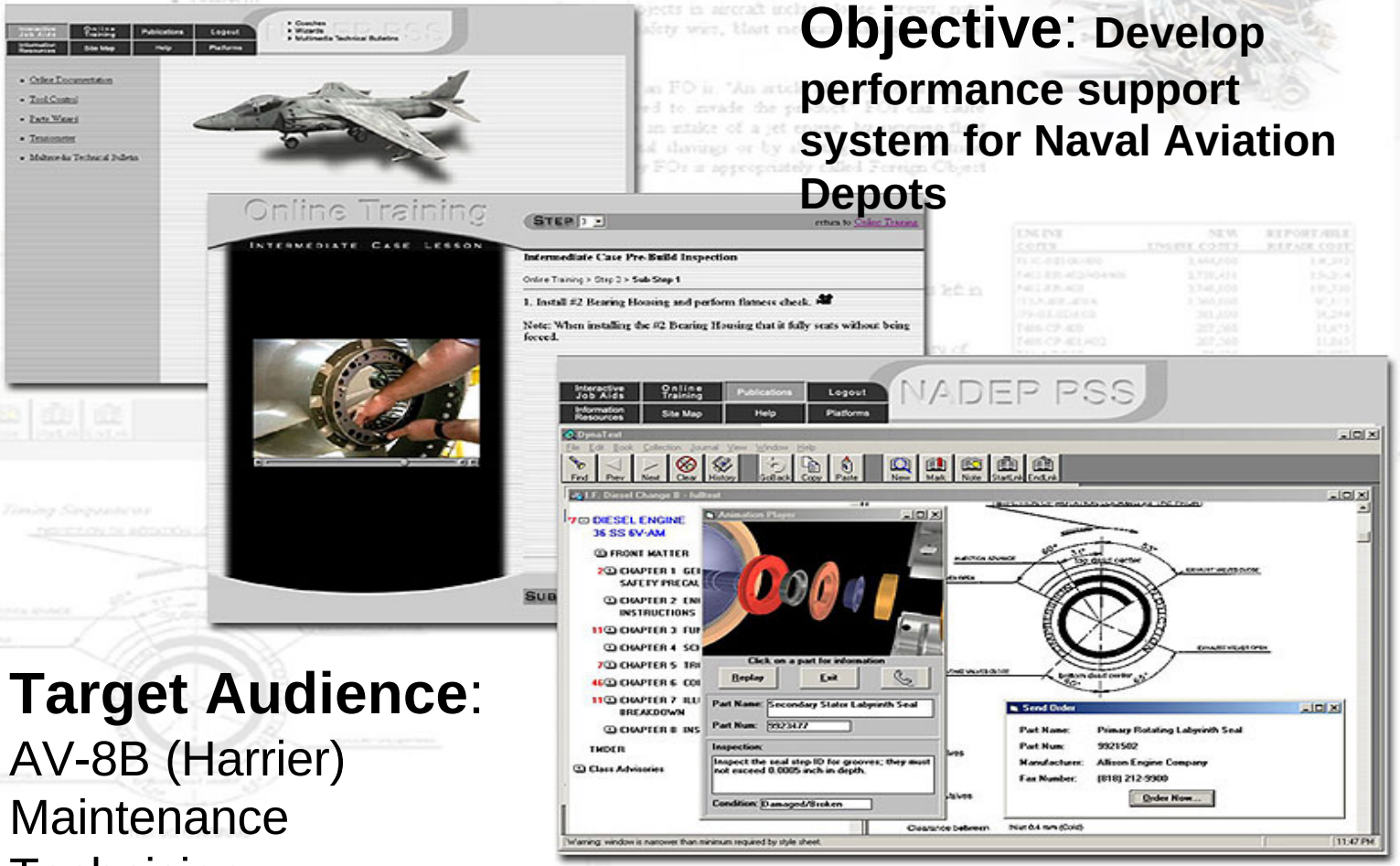
- Instructor isn't physically present
- Can allow learner to progress at own pace
- Wide distribution
  - Can enable broader access to training
- Can be easily combined with performance support tools
- Not locked into an instructional hour
- Can reuse content
- Good design is critical…can't adjust on the fly to student feedback

Modeling and Simulation Basics Course



- **Objective**: To provide DoD M&S basics information.
- **Target Audience**: Personnel new to Modeling & Simulation.

Naval Aviation Depot Performance Support System



Objective: **Develop performance support system for Naval Aviation Depots**

Target Audience:
AV-8B (Harrier) Maintenance Technicians

www.adlnet.org

Advanced Distributed Learning

Combat Casualty Care Training

- ***Objective:*** To provide critical skills thinking and decision making in combat trauma management
- ***Target Audience:*** Physicians, nurses and other health care personnel

Distributed Joint Force Development

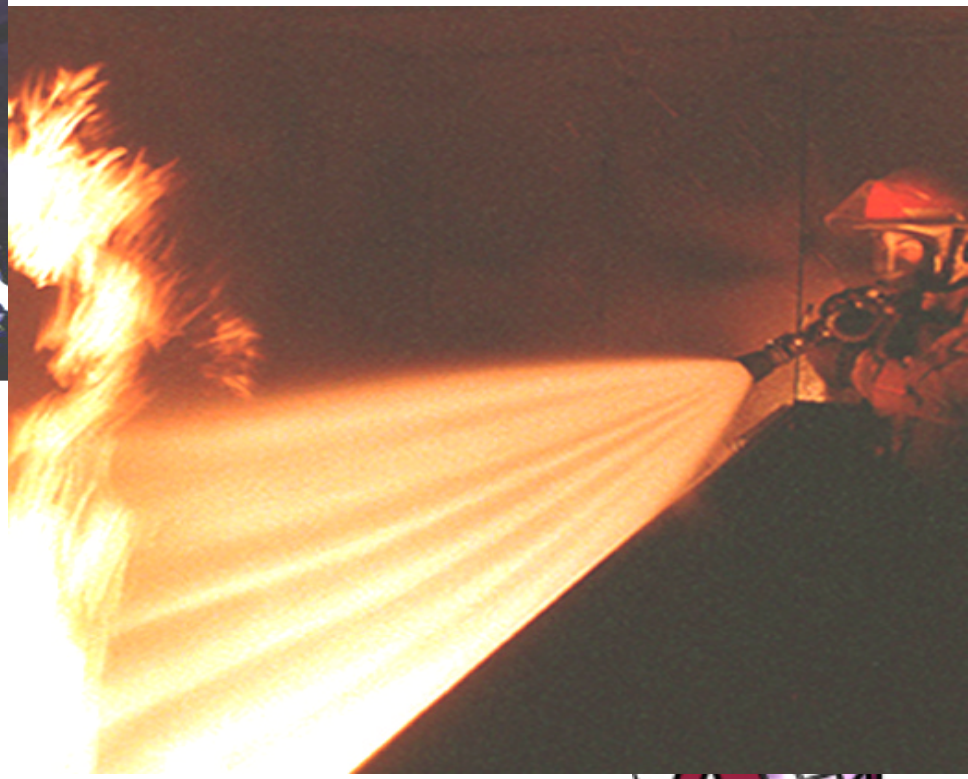
- **Objective:** Demonstrate force vs force play of Joint Force Employment over Internet and LAN Network
  - Cooperative play of one team against another team or computer
  - Air or Land components against computer
- **Target Audience:** Joint Warfighters

Reserve Component Professional Military Education

- **Objective**:
  - Conversion of existing Armed Forces Staff College Joint Professional Military Education(JPME) courses into a format suitable for Advanced Distributed Learning for use in a Joint Planning Course.
- **Target Audience**:
  - Reserve and active component officers going to joint assignments .

ADL for Damage Control Repair Party

Objective: Enhance sailors knowledge of Damage Control/Firefighting on ships



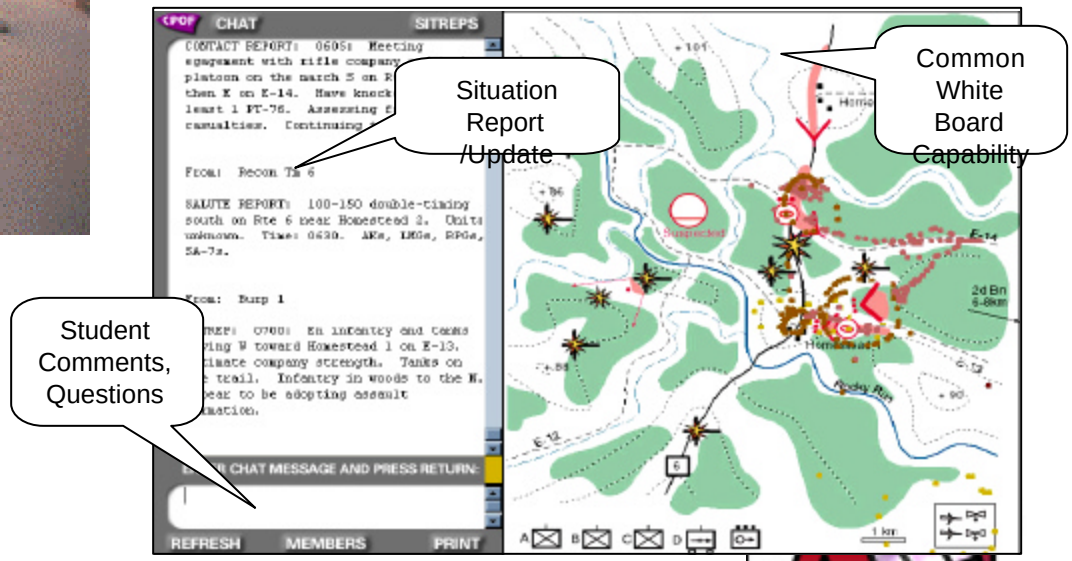
Target Audience:
Navy ship's force and Coast Guard

Advanced Distributed Learning

Electronic Tactical Decision Game for Training Joint Peacekeeping Operations (OOTW)

Objective: To increase readiness prior to deployment—accelerate teamwork and team decision-making skill development by developing automated learner/instructor support tools.

Target Audience: Army Command and Control



eTDG4-Battle of Rocky Run Hollow

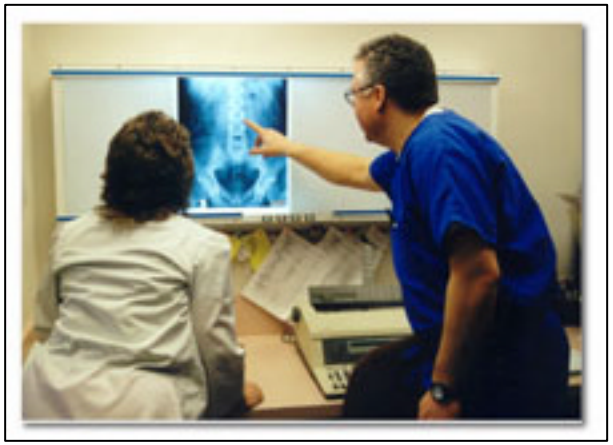
www.adlnet.org

Advanced Distributed Learning

Sharing Medical Case Information

Old Method

Interesting cases in filing cabinets



Faculty Instruction At View-box

Sharing Medical Case Information: Bone Tumor Central Resource

Learning Interactions

Select from a list of 29 bone tumor types

- Description
- Classic Case
- Pathology
- Cases

Search for cases from the complete collection

Search based on user selectable fields or request a random case.

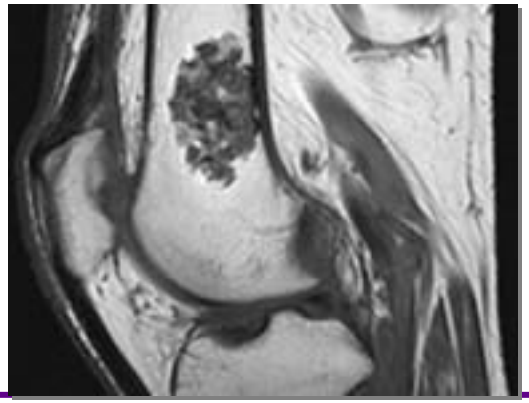
Test (Random set of questions)

- True/False
- Multiple Choice
- Matching
- Fill in the blanks

Play the Game

"Who Wants to be a Bone Rad ?"

Based on the popular Television show, "Who Wants To Be a Millionaire ?"



Objective: Develop multi-media tool to train target audience in pattern recognition, diagnosis and medical problem-solving with focus on r

Target Audience: Medical students, residents and physicians

Advanced Distributed Learning

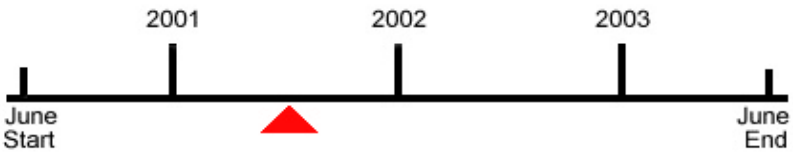
www.adlnet.org

Joint Advanced Distributed Learning Co-Laboratory

- Home
- About
- Contacts
- Directions
- Newsletter
- ADL Prototypes
- Guidelines
- Partnerships
- Calendar
- Forums/Faq's
- Library
- Security Notice
- Webmaster

Advanced Distributed Learning Guidelines Version 1.5

- This site contains a set of evolving ADL guidelines with references.
- It includes checklists and user rating scales for evaluation.
- The guidelines are being applied to ADL prototypes.
- Your feedback will help improve the guidelines & make them more responsive to your needs.
- Return to the site periodically for updates.
- You can now print the entire set of guidelines and rating scales in one document.



Guidelines Project Summary (Text File)

"About the Guidelines" Brief (PPT 1.29 MB)

Register to view the guidelines

Login to View Guidelines

(Registration Required)

Advanced Distributed Learning

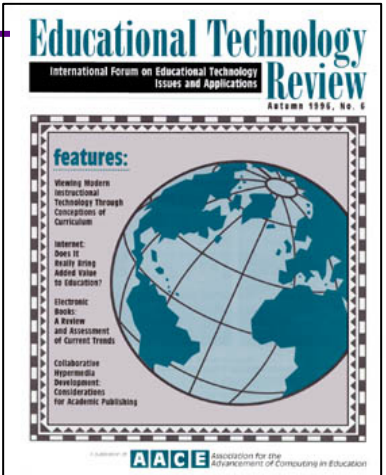
www.adlnet.org

Guidelines are based on educational and psychological research

and on best practices.

Advanced Distributed Learning

Sources



Theoretical articles and literature reviews

Large sets of guidelines already compiled by businesses or institutions

Studies of Education Reform

Articles on best practices or lessons learned

Journal of Instructional Science and Technology

Smaller sets of guidelines on specific topics, such as "online conferencing"

DE DISTANCE EDUCATION AN INTERNATIONAL JOURNAL

Empirical research that establishes the authenticity of a guideline

Advanced Distributed Learning

Evaluation

Two types of evaluation tools are being developed for evaluations of ADL prototypes:

Evaluation Checklists

Check of compliance with guidelines

User Rating Scale

User-learner ratings of usability, etc.

Advanced Distributed Learning

Possibilities for Collaboration

- Review prototypes and contact us if there are some that match your interests

  http:// www.jointadlcolab.org
- Use and provide feedback to the guidelines
- Applications for training in the testing community
- Creation of sharable content object reference models that are based on testing data

ADL Co-Lab FY 00 Prototype Matrix

Projects	New	Legacy		
		Classroom	CBT	Web Based
Introduction To Modeling &Simulation		✓		
EA6-B Training (Adaptive Learning)			✓	
Depot Maint/ Trng Sys for AV8-B Maint (Performance Support)			✓	
Civilian Supervisory Training		✓	✓	
Armor Captain's Career Course				✓
Smart Cruiser	✓			
Air Force M&S ADL Model Program	✓			
Model ADL Repository	✓			

ADL FY 00 Co-Lab Prototype Matrix

Projects	New	Legacy		
		Classroom	CBT	Web Based
Joint SOF Education			✓	
Reserve Component Joint Professional Military Education	✓ ✓			
Distributed Joint Force Employment		✓		
Joint Services ADL Instructor Training				✓
Learning Mgmt System for "SMART" Center		✓ ✓		
ADL for Damage Control Repair Party			✓	✓
Financial Management				

ADL FY 01 Co-Lab Prototype Matrix

Projects	New	Legacy		
		Classroom	CBT	Web Based
Dismounted Warrior	✔		✔	
AF Online Career Development Course		✔ Paper-based		
Sharing Medical Case Information	✔ Game/Entertainment		✔	
SCORM Compliant AU's from Synchronous Distance Learning Efforts			✔	✔
Electronic Tactical Decision Game for Joint Peacekeeping Operations (OOTW) in a Distance Learning Environment				✔

ADL FY 01 Co-Lab Prototype Matrix

Projects	New	Legacy		
		Classroom	CBT	Web Based
Situational Crisis Response Agents and Master Blackboard Logistics Environment (SCRAMBLE)	✔ Job Performance Aid			✔
Validated Training Objects Re-purposed for Job Performance Support Application			✔	
Asynchronous Combat Casualty Care Training			✔	
Common Source Database Applied in a School House and in Performance Mentoring	✔		✔	
Naval Aviation Depot Performance Support System (Phase III)			✔	

Current and Planned Projects

- Current Projects
  - Prototypes (6 complete out of 25)
  - Guidelines
  - Learning Management Evaluation completed for Chief of Naval Education and Training's Navy E-learning
  - Collection of Lessons learned (on-going)
  - Additional prototypes (egress training, SCORM course, use of human subjects, project team training)
  - Small Business Innovation Research projects
- Planned Projects
  - FY 02 Prototypes
  - Repository development and evaluation

Academic ADL Co-Lab

University of Wisconsin

The Pyle Center

WCER

Madison Campus

Advanced Distributed Learning

Academic ADL Co-Lab Partnerships

Signed

- Penn State
- University of California – Irvine, Berkeley
- University of Washington
- Rochester Institute of Technology
- United States Open University
- Mississippi State University
- University of Nebraska – Lincoln
- Carnegie Mellon University
- University of California – Berkeley
- Naval Post-Graduate School (NPS)
- Miami-Dade Community College
- University of New Orleans
- University of Alaska
- Texas A&M System
- Purdue University
- University of Maryland University College
- Central Texas College
- Foothill College
- Miami Dade Medical College
- University of Illinois at Urbana-Champaign
- Vanderbilt-Northwestern-Texas-Harvard/MIT (VaNTH) Center for Bioengineering Educational Technologies

Collaboration on the Development of Technical Learning Standards

Web-based Learning Content Issues

What problems are we are trying to solve?

- Can't move a course from one Learning Management System (server) to another
- Can't reuse content "chunks" across different LMS systems
- Can't create searchable learning content or media repositories across different LMS environments

(just for starters…)

So what to do?

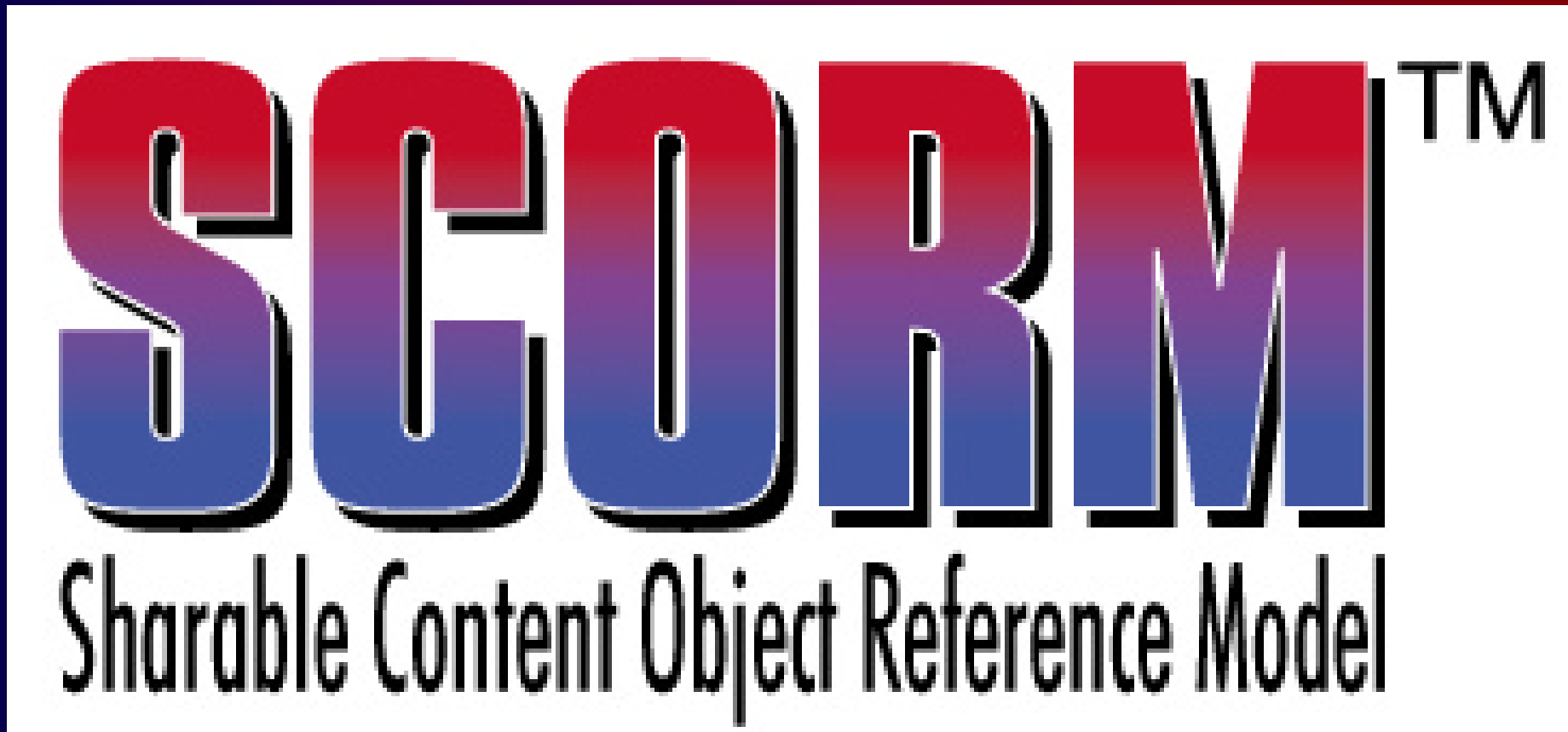
ADL Took Action

Since industry and consortia weren't converging, ADL took a leadership role:

- Building consensus among users, developers and industry
- Acting as a catalyst to bring together key players
- Forging alliances in strategic technical areas
- Accelerating the pace of technology adoption for learning anytime, anywhere

"enlightened self-interest" at work

Advanced Distributed Learning


SCORM™
Sharable Content Object Reference Model

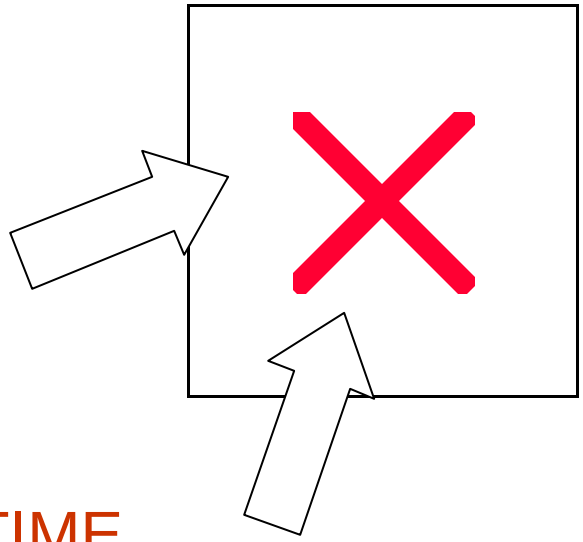
SCORM

CONTENT AGGREGATION MODEL

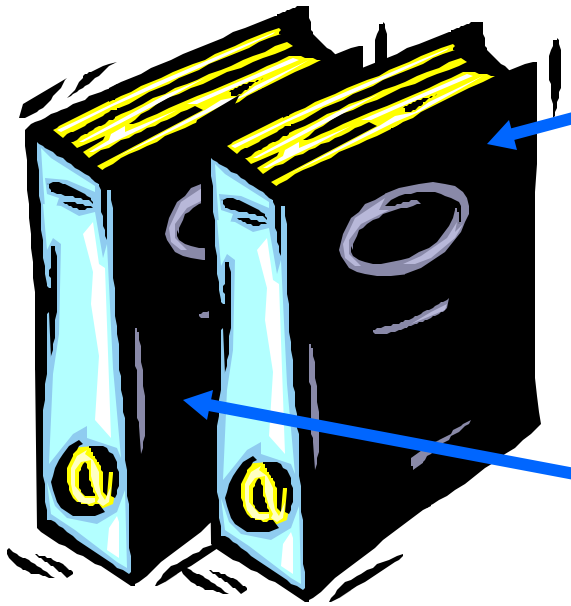
Meta-data XML Binding Best Practice From IMS

Course Structure Format - Derived from AICC

Meta-data dictionary From IEEE



RUN-TIME ENVIRONMENT



Content to LMS API From AICC

Content to LMS data model From AICC

The ADL SCORM – What is it really?

- Integration of industry specifications from
  - AICC
  - IMS
  - ARIANDNE
  - IEEE
- Provides a unified learning content model
- Defines a standardized web “run-time” environment
- Is the first step on the path to defining a true learning architecture

AICC + IEEE + IMS + ADL = SCORM

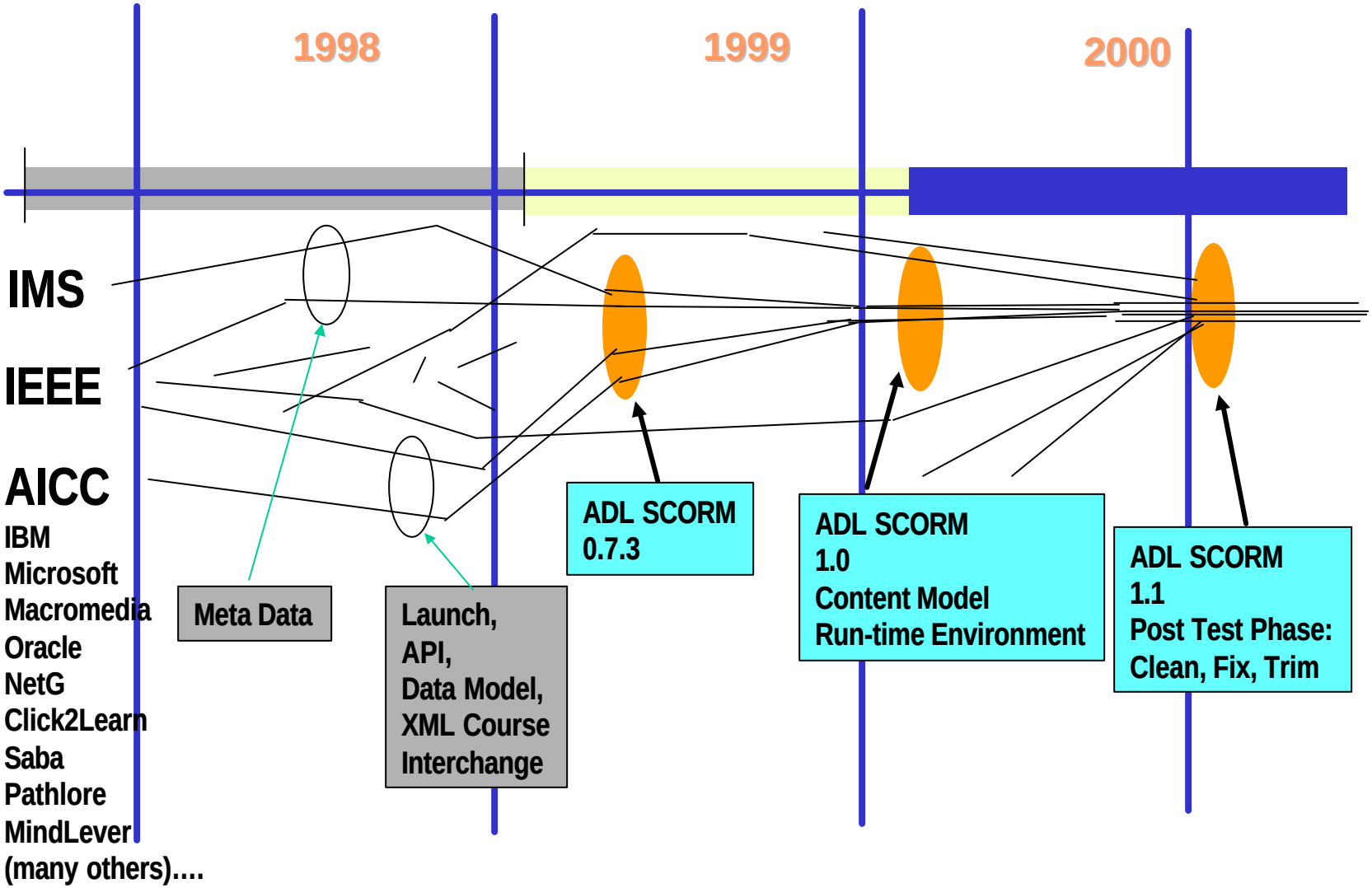
IEEE Meetings
Late 1999

IMS Meetings
Early 2000

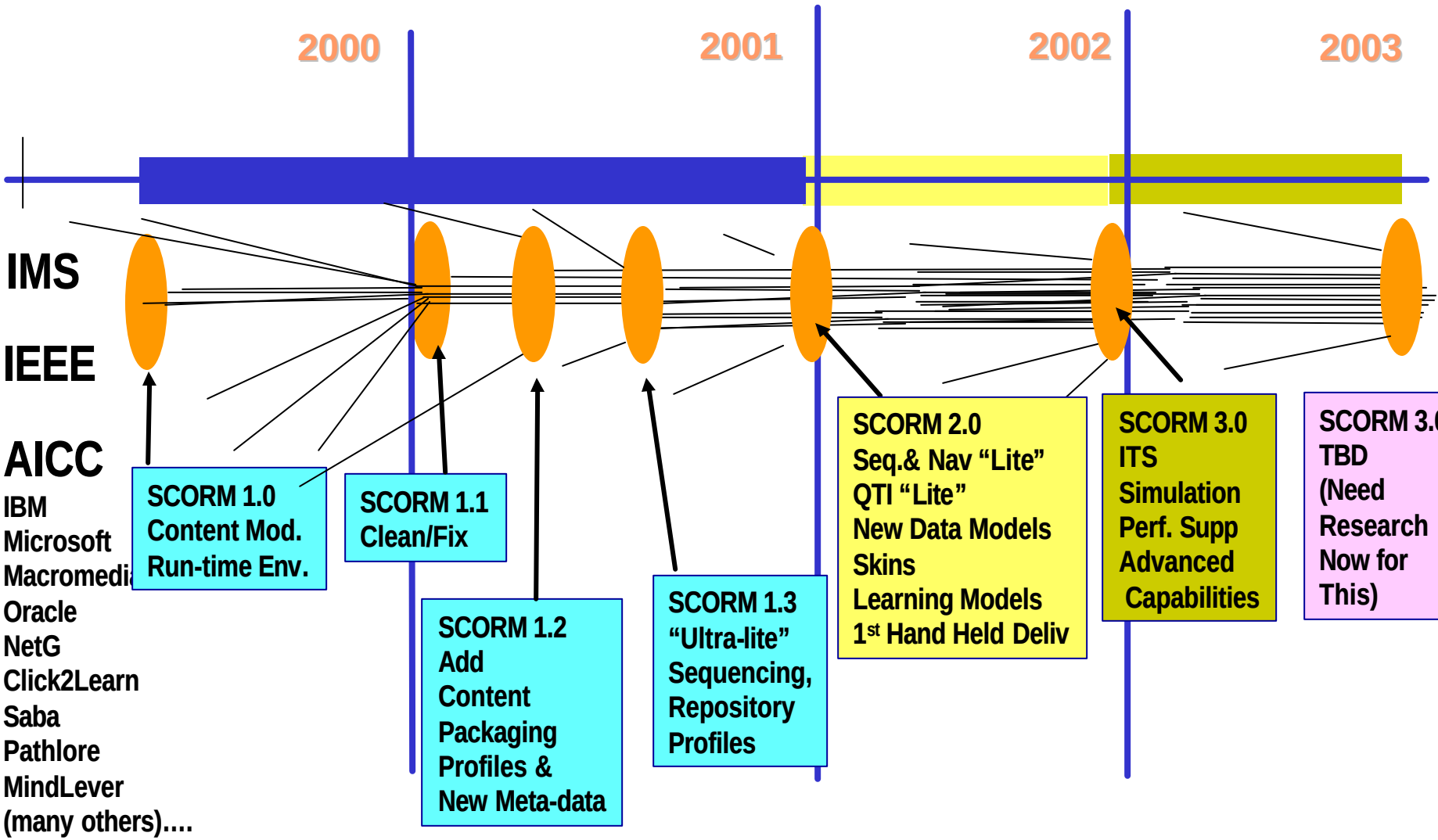
www.adlnet.org

Advanced Distributed Learning

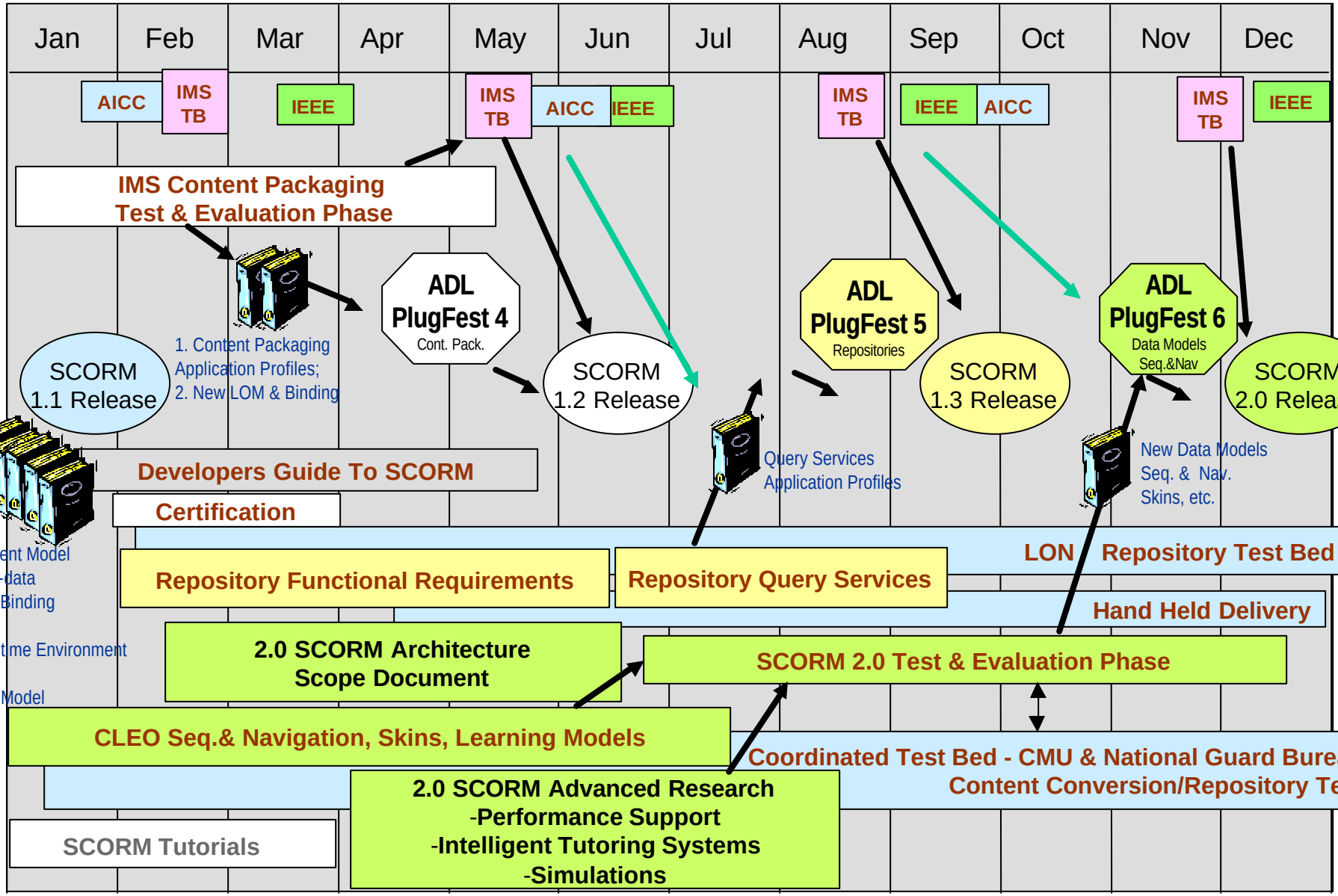
ADL Progress To Date



ADL Future Versions of SCORM

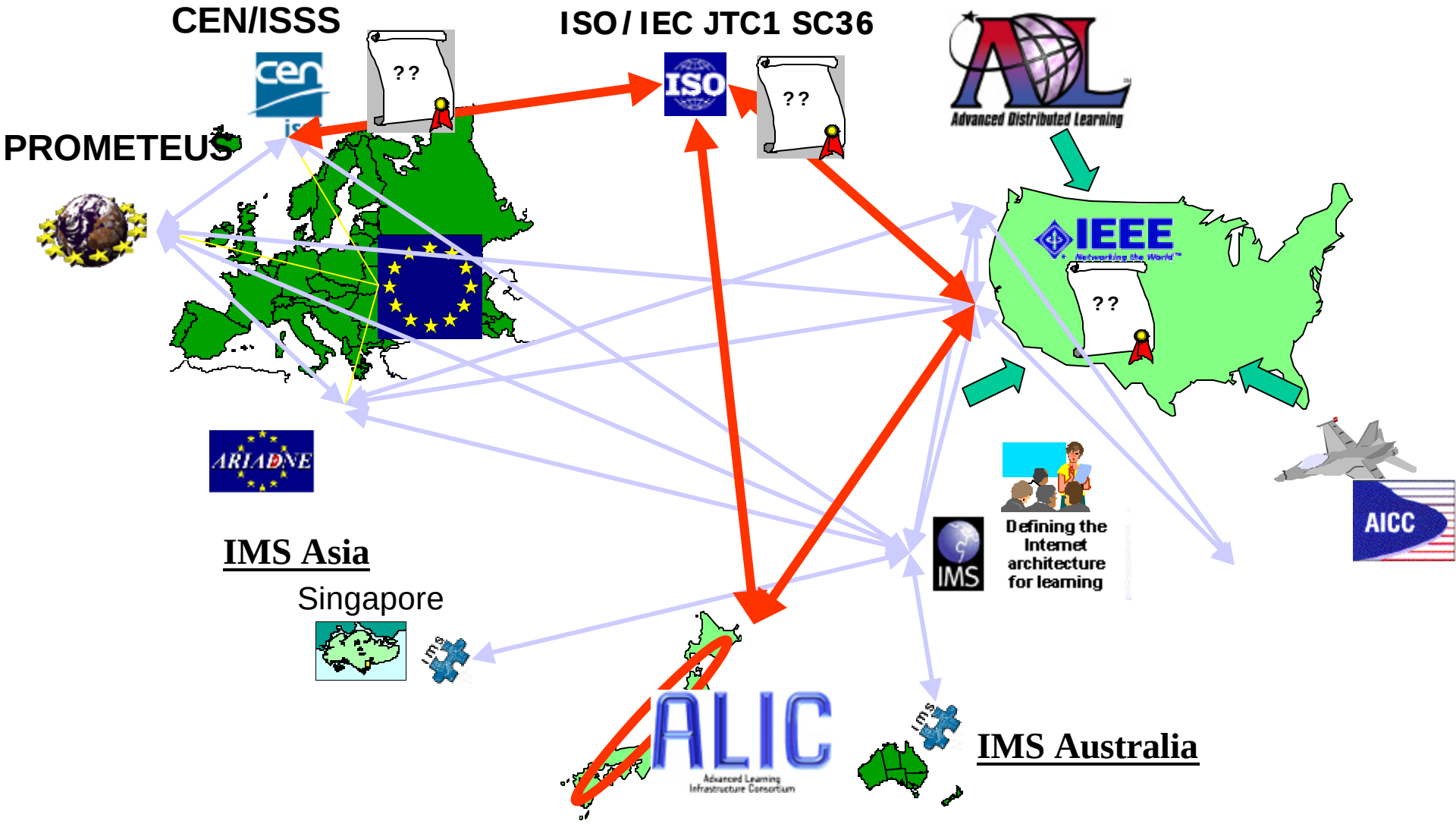


ADL 2001

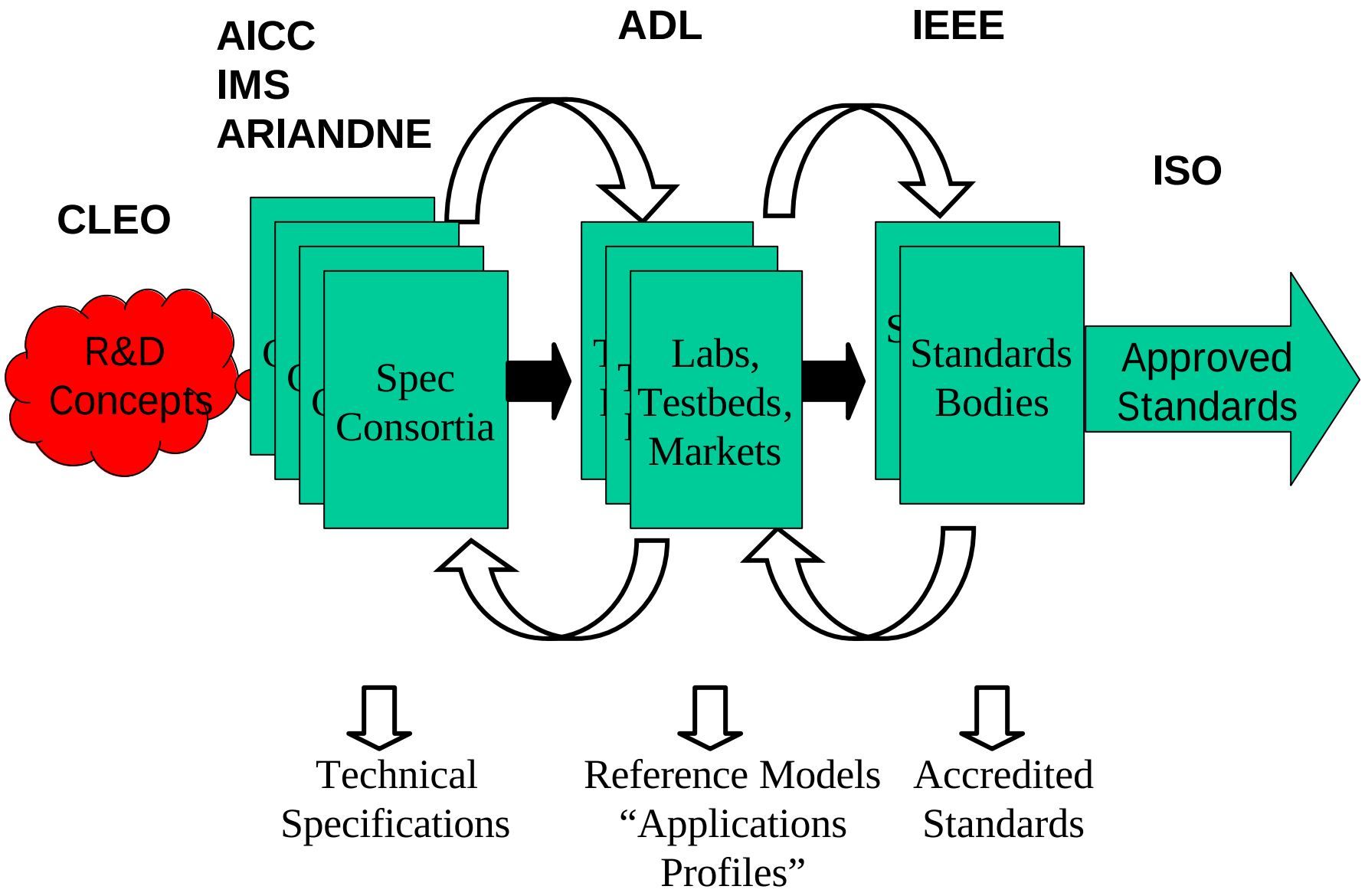

Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
AICC
IMS TB
IEEE
IMS Content Packaging
Test & Evaluation Phase
ADL PlugFest 4
Cont. Pack.
ADL PlugFest 5
Repositories
ADL PlugFest 6
Data Models
Seq.&Nav
SCORM 1.1 Release
SCORM 1.2 Release
SCORM 1.3 Release
SCORM 2.0 Release
1. Content Packaging
Application Profiles;
2. New LOM & Binding
Query Services
Application Profiles
New Data Models
Seq. & Nav.
Skins, etc.
Developers Guide To SCORM
Certification
1. Content Model
- Meta-data
- XML Binding
- CSF
2. Run-time Environment
- API
- Data Model
Repository Functional Requirements
Repository Query Services
LON
Repository Test Bed
Hand Held Delivery
2.0 SCORM Architecture
Scope Document
SCORM 2.0 Test & Evaluation Phase
CLEO Seq.& Navigation, Skins, Learning Models
Coordinated Test Bed - CMU & National Guard Bureau
Content Conversion/Repository Test
2.0 SCORM Advanced Research
-Performance Support
-Intelligent Tutoring Systems
-Simulations
SCORM Tutorials


CLEO
Co-Laboratory
Advanced Distributed Learning
Customized Learning Experiences Online
Carnegie Mellon
Online
IEEE-ISTO
The Open University
Microsoft
click2learn.com
IBM Mindspan Solutions
CISCO SYSTEMS

Resulting in a World Wide Community for Learning Technology



A Model for Standards Evolution



Importance of SCORM?

	Current LMS	Future LMS
• Army (ATSC/TRADOC)	Click2Learn	? Under study
• Navy (CNET)	THINQ	
• Air Force	Plateau, Meridian KSI	? Under study
• Marines	Self Developed	June announcement
• DAU	Self Developed (OSS)	June announcement
• USDA Grad School	None	? Under study
• IRS	None	? Under study
• CDC	Self Developed	? Under study
• NDU	Blackboard	? Under study


Co-Laboratory
Advanced Distributed Learning
PLUGFEST 4
May 30 – June 01, 2001
Alexandria, Virginia
Modern Technologies Corporation
GENERAL DYNAMICS
Communication Systems
Prometheus
Department of National Defense
learnframe
THINQ
LEARNING THAT POWERS BUSINESS
JHT
MULTIMEDIA
FlightSafetyBoeing
GlobalLearning
SYSTEMS
AVILAR
Enabling Effective eLearning
Blackboard Inc.
Carnegie Mellon
Online
Trivantis
WebCT
TASC
Centra
Co-Laboratory
Advanced Distributed Learning
PLUGFEST 4
Microsoft Corporation
macromedia
The University of Memphis
NYU Online, Inc.
click2learn.com
saba
Participants
Online-learning.com
Co-Laboratory
Academic ADL Co-Lab
Pathlore
KnowledgePlanet, Inc.
NS Software Services
THOUGHTWARE
Open UES
SmartForce
MANAGEMENT TECHNOLOGY MSTC
MANTECH SOLUTIONS AND TECHNOLOGIES CORPORATION
MERIDIAN
Knowledge Solutions, Inc.
IEEE-LTSC
Anytime, Anywhere Learning
NAWCTSD
LSI
Learning Objects Network, Inc.
XanEdu
WBT Systems
elementk
the knowledge catalyst
Artesia Technologies
MaxIT
ORACLE
SOFTWARE POWERS THE INTERNET
BOOZ·ALLEN & HAMILTON


PLUGFEST 4
MS Product Briefs
Room 121-123
30. 5. 2001


PLUGFEST 4
Participants
ORACLE
PROXIM
1. 6. 2001

ADL Plugfest 4 Proves e-Learning Specifications Work!

225 VENDORS AND CONTENT DEVELOPERS GATHER TO SUCCESSFULLY TEST AND DEMONSTRATE INTEROPERABILITY USING IMS AND SCORM™ SPECIFICATIONS

Alexandria, VA, June 6, 2001 --- Representatives of 128 organizations from around the world gathered at the Advanced Distributed Learning (ADL) Initiative's Plugfest 4, May 29 – June 1, to test their learning software for compatibility using the latest specifications from ADL and the IMS Global Learning Consortium (IMS). Independently developed software and learning content was combined, connected and demonstrated in real time at the ADL Co-Laboratory in Alexandria, VA. Eighteen different Learning Management System (LMS) providers, 23 learning content providers, and 6 authoring tool providers participated in the event.

Advanced Distributed Learning

Plugfests are not Conferences or Tradeshows

Real Code, Real Testing, Real Products!

What ADL Has Accomplished So Far?

- Co- Developed Version 1.0 & 1.1 -- Common ADL Specifications
- Established the ADL Co- Laboratories
- Expanded the ADL Co- Laboratories - Provided Incentives
- Sponsored development of ADL Prototypes
- Hosted 4 ADL “Plugfests” with Military, Federal, Academic and private sector partners.

Advanced Distributed Learning

ADL Co-Lab - Next Steps

- Update of SCORM specifications
- Evaluate and test
- Develop Compliance Testing Software
- Update ADL Guidelines
- Conduct tutorials demonstrations
- Develop Certification Procedures
- ADL Conference - Sept 25-27, 2001 – Alexandria, VA

Questions?

www.adlnet.org